IN THE CLAIMS

Please cancel claims 9, 10, 14, 18 and 33 without prejudice or disclaimer, and amend claims 1, 4, 11 thru 13, 15 thru 17, 19, 20, 25, 26, 28 and 34 thru 40, as follows:

1. (Currently Amended) An apparatus, comprising:

a converter for converting an input optical signal to an original electrical signal;

an identification unit for receiving said original electrical signal, for generating a first signal ~~corresponding to~~ comprising said original electrical signal delayed by a ~~predetermined~~ predetermined quantity of time, for generating a second signal ~~corresponding to~~ comprising said original electrical signal not delayed, for comparing said first and second signals, for forming a third signal in dependence upon said comparing of said first and second signals, and for detecting a bit rate in dependence upon said third signal;

a clock generator for generating a separate reference clock signal in dependence upon said detected bit rate; and

a recovery unit for recovering an input clock signal and data from said input optical signal in dependence upon said reference clock signal~~; and~~;

wherein said identification unit further comprises:

a first unit for delaying said original electrical signal, for performing [[said]] an exclusive -OR operation upon said first and second signals, and for forming said third signal in dependence upon said exclusive-OR operation performed upon said first and second signals; and

a second unit for filtering said third signal, and for detecting said bit rate in dependence upon a voltage level of said filtered third signal;

said second unit comprising:

a filter for filtering said third signal;

an analog-to-digital converter for receiving said filtered third signal, and for converting said filtered third signal from an analog signal to a digital signal; and

a bit rate deriving unit for deriving said bit rate in dependence upon information related to a voltage level of said digital signal received from said analog-to-digital converter and a predetermined bit rate.

2. (Original) The apparatus of claim 1, said apparatus corresponding to an optical receiver receiving optical signals having a plurality of different bit rates.

3. (Original) The apparatus of claim 1, said bit rate of said input optical signal corresponding to a transmission rate.

4. (Currently Amended) The apparatus of claim 1, further comprising an amplifier for amplifying said original electrical signal received from said converter.

5. (Original) The apparatus of claim 4, said amplifier outputting said amplified

electrical signal to said identification unit.

6. (Original) The apparatus of claim 1, said converter corresponding to an optoelectric converter.

7. (Original) The apparatus of claim 1, said identification unit corresponding to a bit rate identification unit.

8. (Original) The apparatus of claim 1, said comparing performed by said identification unit corresponding to said identification unit performing an exclusive-OR logic operation upon said first and second signals.

Claims 9 and 10. (Cancelled)

11. (Currently Amended) The apparatus of claim [[10]] 1, said filtering corresponding to low-pass filtering.

12. (Currently Amended) The apparatus of claim [[10]] 1, said first unit corresponding to a bit rate identification signal generator.

13. (Currently Amended) The apparatus of claim [[10]] 1, said second unit

corresponding to a bit rate deriving unit.

Claim 14. (Cancelled)

15. (Currently Amended) The apparatus of claim [[10]] 1, said first unit comprising:

a buffer unit for receiving said original electrical signal, and for outputting two duplicate signals substantially equivalent to said original electrical signal, said two duplicate signals ~~corresponding to~~ comprising a primary signal and a secondary signal;

a delay unit for receiving said primary signal, for delaying said primary signal by said predetermined quantity of time, and for outputting said delayed primary signal, said delayed primary signal corresponding to said first signal and said secondary signal corresponding to said second signal; and

an operator unit for performing said exclusive-OR logic operation upon said first and second signals.

16. (Currently Amended) The apparatus of claim 1, said clock generator comprising a plurality of oscillators for generating clocking signals of different frequencies, ~~and selectively operating~~ said oscillators being selectively operated to generate said reference clock signal in dependence upon said bit rate detected by said identification unit.

17. (Currently Amended) A method of operating a receiver which functions independently of a bit rate of a received signal, comprising:

receiving an original signal;

generating a resultant signal by ~~comparing~~ performing an exclusive-OR operation on a first signal and a second signal, said first signal corresponding to said original signal delayed by a predetermined quantity of time, said second signal corresponding to said original signal not delayed;

determining a bit rate of said original signal ~~in dependence upon~~ by low-pass filtering said resultant signal, and determining a voltage level of the low-pass filtered resultant signal;

generating a reference clock signal separate from said original signal and in dependence upon said determined bit rate; and

recovering an input clock signal and data from said original signal in dependence upon said reference clock signal.

Claim 18. (Cancelled)

19. (Currently Amended) The method of claim [[18]] 17, said original signal comprising an input optical signal, said method, further comprising:

~~said original signal corresponding to an input optical signal;~~

converting said input optical signal to an electrical signal;

outputting two duplicate signals substantially equivalent to said electrical signal, said two duplicate signals ~~corresponding to~~ comprising a primary signal and a secondary signal; and

delaying said primary signal by said predetermined quantity of time, and outputting said primary signal, said delayed primary signal ~~corresponding to~~ comprising said first signal.

20. (Currently Amended) The method of claim 17, said first[[,]] and second~~, and third~~ signals ~~corresponding to~~ comprising electrical signals.

21. (Original) The method of claim 17, said method corresponding to receiving signals having a plurality of different bit rates.

22. (Original) The method of claim 17, said original signal received corresponding to a plurality of original signals received, said recovering of said input clock signal and data from said original signal being performed for said plurality of original signals received, said plurality of original signals received having a respective plurality of different bit rates.

23. (Original) The method of claim 17, said recovering of said input clock signal

and data from said original signal being performed for a plurality of original signals received, said plurality of original signals received having a respective plurality of different bit rates.

24. (Original) The method of claim 17, said method corresponding to receiving optical signals having a plurality of different bit rates.

25. (Currently Amended) The method of claim 17, further comprising:

receiving an input optical signal;

converting said input optical signal to an original electrical signal;

outputting two duplicate signals substantially equivalent to said original electrical signal, said two duplicate signals ~~corresponding to~~ comprising a primary signal and a secondary signal; and

delaying said primary signal by said predetermined quantity of time, and outputting said primary signal, said delayed primary signal ~~corresponding to~~ comprising said first signal, said outputted primary signal comprising said second signal.

26. (Currently Amended) The method of claim 17, said receiving of said original signal being performed by an optoelectric converter, said original signal being an optic signal, said optoelectric converter converting said original optic signal to an electrical signal, said method further comprising:

~~said receiving of said original signal being performed by an optoelectric converter, said original signal being an optic signal, said optoelectric converter converting said original optic signal to an electrical signal;~~

outputting two duplicate signals substantially equivalent to said electrical signal, said two duplicate signals ~~corresponding to~~ comprising a primary signal and a secondary signal, said outputting of said two duplicate signals being performed by a buffer; and

delaying said primary signal by said predetermined quantity of time, and outputting said primary signal, said delayed primary signal ~~corresponding to~~ comprising said first signal, and said outputted primary signal comprising said second signal.

27. (Original) The method of claim 17, said generating of said reference clock signal being performed by a clock generator, said clock generator comprising a plurality of oscillators generating clocking signals of different frequencies and selectively operating said oscillators to generate said reference clock signal in dependence upon said detected bit rate.

28. (Currently Amended) An apparatus, comprising:

a converter for converting an input optical signal to an original electrical signal;

an identification unit for receiving said original electrical signal, for generating a first signal ~~corresponding to~~ comprising said original electrical signal delayed by a ~~predetermined~~ predetermined quantity of time, for generating a second signal ~~corresponding~~

~~to~~ comprising said original electrical signal not delayed, for forming a third signal by performing an exclusive-OR logic operation upon said first and second signals, and for detecting a bit rate in dependence upon said third signal;

a clock generator for generating a reference clock signal in dependence upon said detected bit rate; and

a recovery unit for recovering an input clock signal and data from said input optical signal in dependence upon said reference clock signal;

said identification unit comprising:

a first unit for delaying said original electrical signal, for performing said exclusive-OR operation upon said first and second signals, and for forming said third signal; and

a second unit for filtering said third signal, and for detecting said bit rate in dependence upon a voltage level of said filtered third signal.

29. (Original) The apparatus of claim 28, said clock generator comprising a plurality of oscillators generating clocking signals of different frequencies and selectively operating said oscillators to generate said reference clock signal in dependence upon said bit rate detected by said identification unit.

30. (Original) The apparatus of claim 28, said input optical signal corresponding to a plurality of input optical signals, said recovering of said input clock signal and data

from said input optical signal being performed for each of said plurality of input optical signals, said plurality of input optical signals received having a plurality of different bit rates.

31. (Original) The apparatus of claim 30, said converter corresponding to an optoelectric converter.

32. (Original) The apparatus of claim 31, said identification unit corresponding to a bit rate identification unit.

Claim 33. (Cancelled)

34. (Currently Amended) The apparatus of claim [[33]] 28, said second unit comprising:

a filter for filtering said third signal;

an analog-to-digital converter for receiving said filtered third signal, and for converting said filtered third signal from an analog signal to a digital signal; and

a determiner for determining said bit rate in dependence upon said digital signal received from said analog-to-digital converter.

35. (Currently Amended) The apparatus of claim [[33]] 28, said first unit

comprising:

a buffer unit for receiving said original electrical signal, and for outputting two duplicate signals substantially equivalent to said original electrical signal, said two duplicate signals ~~corresponding to~~ comprising a primary signal and a secondary signal;

a delay unit for receiving said primary signal, for delaying said primary signal by said predetermined quantity of time, and for outputting said primary signal, said delayed primary signal ~~corresponding to~~ comprising said first signal; and

an operator unit for performing said exclusive-OR logic operation upon said first and second signals.

36. (Currently Amended) The apparatus of claim [[33]] 28, said clock generator comprising a plurality of oscillators for generating clocking signals of different frequencies, ~~and selectively operating~~ said oscillators being selectively operated to generate said reference clock signal in dependence upon said bit rate detected by said identification unit.

37. (Currently Amended) The apparatus of claim [[33]] 28, said filtering corresponding to low-pass filtering.

38. (Currently Amended) The apparatus of claim 37, said second unit comprising:

a filter for filtering said third signal;

an analog-to-digital converter for receiving said filtered third signal, and for converting said filtered third signal from an analog signal to a digital signal; and

a determiner for determining said bit rate in dependence upon said digital signal received from said analog-to-digital converter.

39. (Currently Amended) The apparatus of claim 38, said first unit comprising:

a buffer unit for receiving said original electrical signal, for outputting two duplicate signals substantially equivalent to said original electrical signal, said two duplicate signals ~~corresponding to~~ comprising a primary signal and a secondary signal;

a delay unit for receiving said primary signal, for delaying said primary signal by said predetermined quantity of time, and for outputting said primary signal, said delayed primary signal ~~corresponding to~~ comprising said first signal; and

an operator unit for performing said exclusive-OR logic operation upon said first and second signals.

40. (Currently Amended) The apparatus of claim 39, said clock generator comprising a plurality of oscillators for generating clocking signals of different frequencies, ~~and selectively operating~~ said oscillators being selectively operated to generate said reference clock signal in dependence upon said bit rate detected by said identification unit.